



UNITED STATES PATENT AND TRADEMARK OFFICE

HA

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,962	09/26/2003	Jiro Yamada	09792909-5692	3592
26263	7590	07/25/2006	EXAMINER	
SONNENSCHN NATH & ROSENTHAL LLP P.O. BOX 061080 WACKER DRIVE STATION, SEARS TOWER CHICAGO, IL 60606-1080			GUHARAY, KARABI	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,962

Applicant(s)

YAMADA ET AL

Examiner

Karabi Guharay

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCe, filed on 5/31/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6 is/are rejected.
- 7) ☒ Claim(s) 2 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/31/06</u> . | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/31/2006 has been entered.

Response to Amendment

Amendment, filed on 15 May 2006 has been considered and entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4 & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuda et al. (Synthetic Metals, Vol 111-112, published June 1, 2000).

Regarding claims 1 & 4, Fukuda et al. discloses a light emitting display unit (OLED, see Fig 1a) comprising a light emitting layer (EML) between a first electrode

Art Unit: 2879

(anode) and a second electrode (cathode) and a resonator structure resonating light generated in the light emitting layer between a first end portion and a second end portion (shown in dark black line in Fig 1(b), wherein an optical distance L_1 between the first end portion and a maximum light emitting portion (see Fig 1b) satisfies

Mathematical Formula 1,

$$L_1 = tL_1 + a_1$$

$$(2tL_1)/\lambda = -\Phi/(2\pi) + m_1,$$

where tL_1 represents a theoretical optical distance between the first end portion and the maximum light-emitting position, a_1 represents a correction amount based upon a light-emitting distribution in the light-emitting layer, λ represents a peak wavelength of the spectrum of light desired to be extracted, Φ represents a phase shift of reflected light generated in the first end portion, and m_1 is 0 or an integer, (see equation 2, where Φ is 180 degrees), though it is not explicitly mentioned, first equation of the mathematical formula 1 is satisfies since effective optical distance L_1 will always be sum of theoretical optical distance and the correction term, further Fukuda et al. disclose an optical distance L_2 between the second end portion and the maximum light-emitting layer (see Fig 1b) satisfy Mathematical Formula 2

$$L_2 = tL_2 + a_2$$

$$(2tL_2)/\lambda = -\Phi/(2\pi) + m_2,$$

where tL_2 represents a theoretical optical distance between the second end portion and the maximum light-emitting position, a_2 represents a correction amount based upon a

Art Unit: 2879

light-emitting distribution in the light-emitting layer, λ represents a peak wavelength of the spectrum of light desired to be extracted, Φ represents a phase shift of reflected light generated in the second end portion, and m_2 , is 0 or an integer, (equation 2, where Φ is 180 degrees), and formula 2 is satisfied since effective optical distance L_2 will always be sum of theoretical optical distance and correction, wherein the distance L between the first and second end portion equals the sum of the distances L_1 and L_2 . (see Fig 1b).

Regarding claims 3 & 6, Fukuda et al. disclose that the light emitting layer is an organic layer (see abstract).

Claims 1, 3, 4 & 6 rejected under 35 U.S.C. 102(e) as being anticipated by Tyan et al. (US 6861800).

Regarding claims 1 & 4, Tyan et al. disclose a light emitting display unit (OLED, see Fig 3a 7 3b) comprising a light emitting layer (14) between a first electrode (12T) and a second electrode (16R) and a resonator structure resonating light generated in the light emitting layer between a first end portion and a second end portion (between electrodes), wherein an optical distance L_1 between the first end portion and a maximum light emitting portion (in this case from electrode 16R to center of the light emitting layer 14c) satisfies Mathematical Formula 1,

$$L_1 = tL_1 + a_1$$

$$(2tL_1)/\lambda = -\Phi/(2\pi) + m_1,$$

where tL_1 represents a theoretical optical distance between the first end portion and the maximum light-emitting position, a_1 represents a correction amount based upon a light-emitting distribution in the light-emitting layer, λ represents a peak wavelength of the spectrum of light desired to be extracted, Φ represents a phase shift of reflected light generated in the first end portion, and m_1 is 0 or an integer, (see equation 2, in column 10 and lines 57-66 of column 10), though it is not explicitly mentioned, first equation of the mathematical formula 1 is satisfied since effective optical distance L_1 will always be sum of theoretical optical distance and the correction term, further Tyan et al. disclose an optical distance L_2 between the second end portion and the maximum light-emitting layer (from bottom electrode 12T to the center of light emitting layer 14c, see Fig 1b) satisfy Mathematical Formula 2

$$L_2 = tL_2 + a_2.$$

$$(2tL_2)/\lambda = -\Phi/(2\pi) + m_2,$$

where tL_2 represents a theoretical optical distance between the second end portion and the maximum light-emitting position, a_2 represents a correction amount based upon a light-emitting distribution in the light-emitting layer, λ represents a peak wavelength of the spectrum of light desired to be extracted, Φ represents a phase shift of reflected light generated in the second end portion, and m_2 is 0 or an integer, and formula 2 is satisfied since effective optical distance L_2 will always be sum of theoretical optical distance and correction, wherein the distance L between the first and second end portion equals the sum of the distances L_1 and L_2 (lines 8-13 of column 11).

Art Unit: 2879

Regarding claims 3 & 6, Tyan et al. disclose that the light emitting layer is an organic layer (see abstract).

Allowable Subject Matter

Claims 2 & 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 2 & 5, the prior art of record neither shows nor suggest a display device comprising the limitations of claims 2 & 5, together with other cited limitations.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2879

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Karabi Guharay
Primary Examiner
Art Unit 2879
7/18/06